**IT Applications Unit 3**

**Ch 1 Problem Solving**

5 elements of an information system:

* **Software**
* **Hardware**
* **Data** to be manipulated
* **Personnel** to oversee the running of the system.
* **Procedures** to ensure the running of the system

The purpose of an information system is to produce meaningful information which is taken from data, (raw, unorganised facts). It includes a group of components that work together.

The advantage of using an information system in a supermarket is having systems like the payroll system. Data on each employee – such as the number of hours work, the pay rate and overtime hours – is processed to produce meaningful information, such as the employee’s pay slip and payroll reports.

**Software:**

What is software?

* The computer needs detailed instructions to be able to manipulate data into information. These instructions are known as soft ware.

Describe the role of the following four main types of software:

* There are four main types of software:
* **Operation or system software** – controls the actual operations of the computer hardware. A computer system without an operating system would not e able to run ant applications. Some of the functions of an operating system include:
* **Starting up the computer**
* **Executing and storing application programs.**
* **Storing and retrieving files**
* **Sending information to output devices**
* **Performing services such as formatting disks.**
* **Application software –** provides support to computer users. It includes -
* **Word processing programs** (e.g. Microsoft Word or Corel WordPerfect)
* **Spreadsheet** (e.g. Excel or Quattro Pro)
* **Databases** (e.g. Access or Filemaker Pro)
* **Utility software –** a type of system software that performs a particular task. Most operating systems include utility programs that perform tasks such as diagnosing problems, scanning disks and defragmenting disks. Other software includes programs for creating backups and concerting data into different formats, and virus protection programs, such as Norton Anti-Virus or McAfee VET.
* **Programming software –** is a set of works and/or codes that allow a programmer to communicate instructions to a computer. Some examples of programming languages are Delphi, Visual Basic, C++, Hypertalk, HTML (hypertext markup language) and Java.

**A peripheral device** is an external device that is attached to a computer, such as a scanner or printer.

What is a device driver – a small program that informs the operating systems how to interact with the hardware. **For example scanners, printers and webcams need utility software to communicate with the computers. This is generally provided on a disk or can be downloaded from the manufacturer’s website.**

**Application software**

**Distinguish between off-the-shelf software and custom-made software –** Software purchased from a shop is often referred to as ‘off-the-shelf’ pr ‘shrink-wrapped’ software. This means that is common and written for the mass market (e.g. Microsoft Office). Software that is specifically written or custom-made for a specifically written or custom-made for a specific purpose cost more, but its features are very specific to the needs of the user.

**The rights in terms of software** being purchased are that you don’t own it and can’t give it to other people to use or install.

**Hardware:**

**The role, using examples of the following hardware devices:**

**Input devices** allow a user to enter data into a computer. Examples of popular input devices include keyboards, webcams, microphones, scanners and pointing devices such as a mouse.

**Output devices** transmit and communicate information to users through devices such as printers, monitors, data projectors and speakers.

**System unit** consist of a variety of components that comprise the ‘brain’ of the computer. Like that of humans, the computer’s ‘brain’ processes data and executes instructions.

**RAM** is random access memory which can be used by programs to perform necessary tasks and **ROM** is read only memory when it can be accessed read but information can’t be changed.

**Storage devices –** information is stored on a storage device for use later on. The storage device records files to and retrieves files from the storage medium. Some common storage devices include hard disks, CD-RW/DVD-RW drives and tape drives.

**Communication devices** – allow computers to communicate with other computers. Examples include interface cards (NICs) and modems that allow for connection between two computers.

**Data:**

**Distinguish between data and information** – input in an information system is known as data. Data refers to raw, unorganised facts. Once data is entered into an information system, it is manipulated or processed into a meaningful and useful form to become known as information.

**Personnel**

**Personnel’s** are also known as users. ‘Users’ is a broad term describing employees, customers, sellers of goods and other people who use the information system.

**Procedures**

**Procedures** can be defined as a series of steps that are followed so that tasks are performed uniformly and consistently. They describe the tasks the users, ICT personnel and managers perform in relation to the information system. These tasks might include backing up data, adding a new account for a customer of an online stockbroker or checking backup data files every morning.